

Cryo EM - Plasma Cleaner Protocol

Procedures

A. Instrument Setup

1. This instrument requires pressurized oxygen and hydrogen gas in the laboratory. Ensure they are kept in proper areas (with a chemical fume hood and cylinders properly secured) at a safe distance from sources of ignition and other fuels.
2. Purchase plastic tubing specific to your instrument.
3. Ensure H₂ and O₂ are at the proper ~25 psi pressure and attached properly to the instrument via your specific tubing.
4. Prime the lines of each gas using the plasma cleaner's automated priming program in its settings.

B. Cleaning

1. Ensure that the grids you are using have no physical deformities prior to plasma cleaning.
2. Place the grids on a glass slide with the sample side facing up.
3. Set the plasma cleaner to the proper settings for plasma cleaning your grid of choice (e.g., carbon film grid for 10–15 seconds of plasma, cryo grids for 30 seconds of plasma).
4. Slide the door to the plasma cleaner open and place the glass slide on the metal stand.
5. Close the door and push the start button to begin. The cycle will start by generating a vacuum—listen for the pump.
6. After this, plasma cleaning will begin, which should be a purple color when it comes out. Ensure the proper purple color is emitted by watching through the viewing chamber.
7. When plasma cleaning is completed, press the “vent” button to release the vacuum, then remove the samples with the slide.
8. Keep the slide in a petri dish to avoid contamination, and ensure grids are used within half an hour of plasma cleaning for optimal results.